REMARKS

The present invention relates to a multi-layer gas sensor element and a gas sensor comprising the element.

In the Office Action of May 15, 2003, examined claims 1, 3-12, and 14-20 were rejected, with claims, 1, 3-8, and 14-19 being rejected under 35 U.S.C. § 103(a) based on Shibata '174 in view of Mase '693, and claims 1, 3-12, and 14-19 also being rejected under 35 U.S.C. § 103(a) based on Takahashi '485 in view of Mase '693.

Claim 20 was rejected under 35 U.S.C. § 103(a) based on Shibata '174 and Mase '693 further in view of Friese '650 with evidence from Practical Handbook of Material Science, and also based on Takahashi '485 and Mase '693 further in view of Friese '650 with evidence from the Practical Handbook of Material Science.

In the present Amendment, claim 20 has been incorporated into claim 1. Is it respectfully submitted that this obviates the first two § 103 rejections noted above, since claim 20 was not included in those rejections.

Applicants furthermore respectfully submit that amended claim 1 herein and all of remaining claims 3-12 and 14-19 are now allowable, and the rejections previously made with respect to the claims, including the combinations of art relied upon for the rejection of claim 20, should now be withdrawn, and the claims allowed.

Particularly, the Examiner's attention is directed to the fact that both of the rejections of claim 20 relied upon, in addition to two primary references in each case, additionally the Friese '650 reference with "evidence from the Practical Handbook of Material Science."

Applicants respectfully note that although Friese '650 shows a cylindrical portion 14 containing a high percentage of alumina e.g., 50% by volume, Friese '650 does not suggest solving the problem of warpage of a multi-layer gas sensor. There is no recognition in Friese '650 or the other references of the advantage of the present invention in obtaining a warpage level of less than 2 μm. In other words, even considering Friese '650 in combination with Shibata '174 and Mase '693 or with Takahashi '485 and Mase '693, there is no bases in the cited art for recognizing the solution to the problem of warpage of a multi-layer gas sensor that is achieved in the present invention, even if the solid electrolyte member contains a high percentage of the ceramic component. In this regard, the Examiner's attention is directed to the embodiments of the present invention described in the specification, including the examples at pages 11 at *seq. et.*, including the electrolyte member as described at pages 13, etc.

Again, in view of the very precise and specific definition of the multi-layer gas sensor element of the present invention in accordance with the amended claim 1 herein, it is respectfully submitted that even the multitude of references cited by the Examiner does not provide sufficient bases for a person of ordinary skill in the art to find suggestion or other motivation that would led such a person or ordinary skill to the presently claimed invention.

In view of the above, reconsideration and allowance of remaining claims 1, 3-12, and 14-19 of this application are now submitted to be proper, and such actions are hereby earnestly solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the local Washington, D.C. telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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